CHAPTER 5

Network Element Management

This chapter describes how to manage chassis using the Cisco Catalyst Switch Manager, and consists of the following primary sections:

- Chassis Layer2/Layer3 Management Window
- Network Element Management Window
- MAC Address Query Window

Chassis Layer2/Layer3 Management Window

The Chassis Layer2/Layer3 Management window provides capabilities to enable or disable Cisco discovery, unidirectional, LAN and IP routing protocols on the network element.

To launch the Chassis Layer2/Layer3 Management window, either:

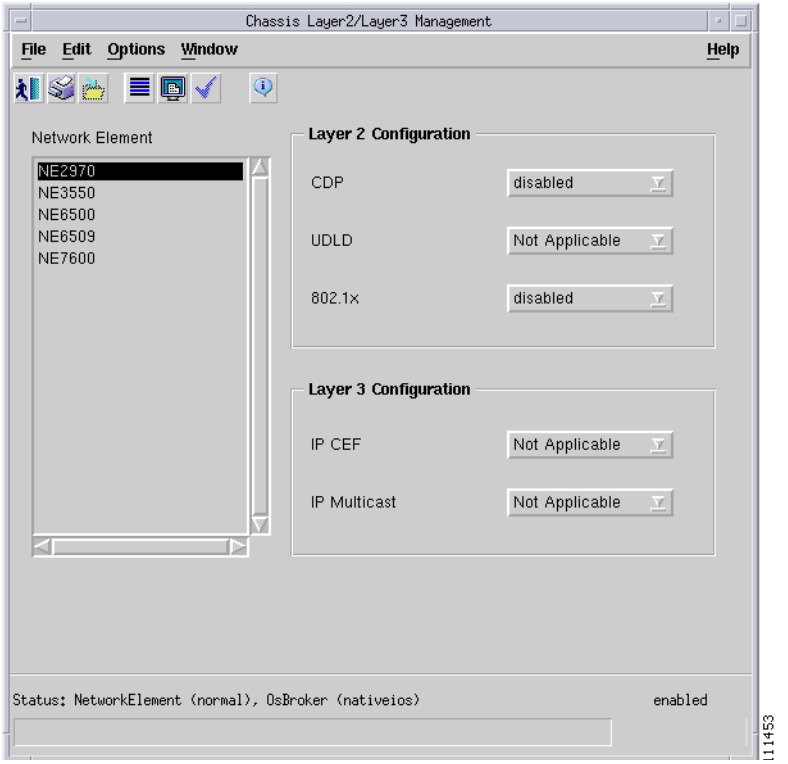
- Right–click a Site object within the Network or Physical containment views, then choose
  CSM/7600 Manager > Chassis Mgmt–IP

  Or

- Right–click a Network Element object within the Network or Physical containment views, then choose **Chassis Mgmt–IP**.

Figure 5-1 is an example of the Chassis Layer2/Layer3 Management window.

Figure 5-1 Chassis Layer2/Layer3 Management Window



The Chassis Layer2/Layer3 Management window includes the following areas:

- Layer 2 Configuration
- Layer 3 Configuration

Layer 2 Configuration

The Layer 2 Configuration area provides:

- CDP—Displays the Cisco Discovery Protocol (CDP) global status on the network element, enabled or disabled.
- UDLP—Displays the UniDirectional Link Detection Protocol (UDLP) global status on the network element: enabled, aggressive, or disabled. The “aggressive” option is not applicable for CatOS.
- 802.1x—Displays the 802.1x Port Based Authentication global status on the network element, enabled or disabled.

Note Dot1x cannot be enabled if dynamic mode is enabled on one or more ports.

Layer 3 Configuration

The Layer 3 Configuration area provides:

- IP CEF—Displays the status of the IP CEF routing on the network element, enabled or disabled. This feature cannot be disabled on Cisco 3950, 4000, 4500, 6000, 6500, and 7600 series devices.
- IP Multicast—Displays the status of the IP Multicast routing on the network element, enabled or disabled.

Network Element Management Window

The Network Element Management window provides monitoring and management information for properties related to the . These properties include the Telnet and Enable passwords, global performance logging, and SNMP properties for the entire switch.

To launch the Network Element Management window, either:

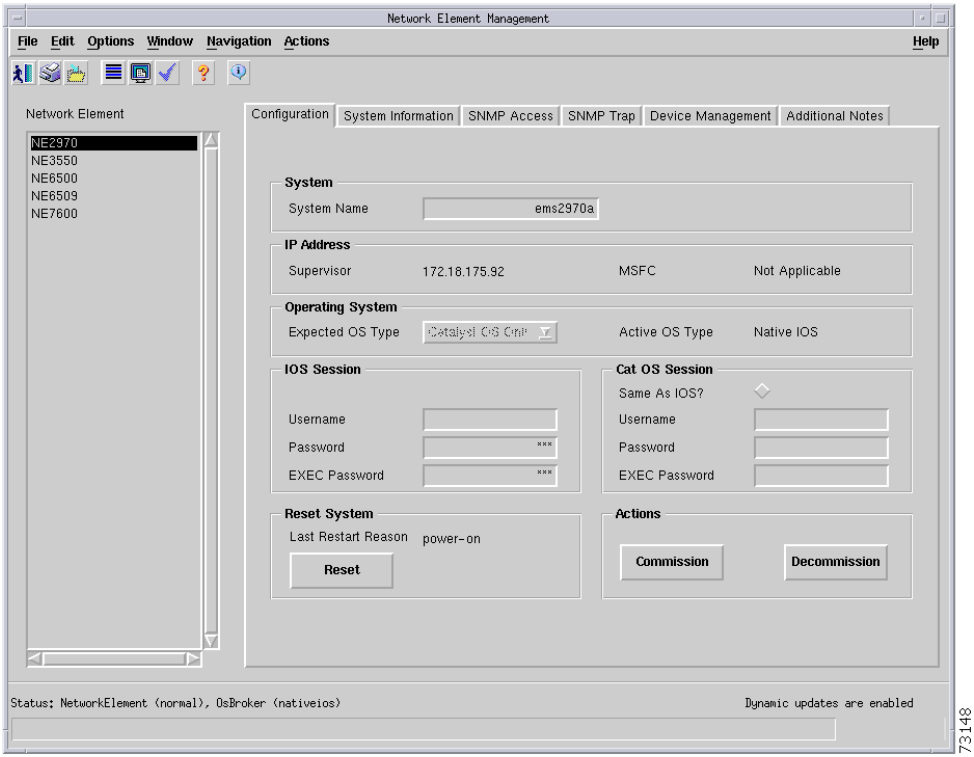
- Right–click a Site object within the Network or Physical containment views, then choose **CSM/7600 Manager > NE Config/Mgmt**.

Or

- Right–click a Network Element object within the Network or Physical containment views, then choose **NE Config/Mgmt**.

Figure 5-2 is an example of the Network Element Management window.

Figure 5-2 Network Element Management Window



The Network Element object list (left-hand side of the window) allows multiple objects to be selected, so that configuration changes can be applied to multiple Network Element objects at the same time.

The following tabs are available on the Network Element Management window:

- Configuration Tab
- System Information Tab
- SNMP Access Tab
- SNMP Trap Tab
- Device Management Tab
- Additional Notes Tab

Configuration Tab

The following areas are available on the Configuration tab of the Network Element Management window:

- ISystem
- IP Address
- Operating System
- IOS Session
- Cat OS Session
- Reset System
- Actions

ISystem

The System area provides the System Name. This is a Fully qualified name of the switch or router.

IP Address

The IP Address area provides:

- Supervisor—IP address used to access the switch or router.
- MSFC—IP address of the management agent on the MSFC daughter card (only in Hybrid OS).

Operating System

The Operating System area provides:

- Expected OS Type—This attribute is used by a client that initiates a deployment context to indicate the type of operating system expected on a managed device. This can only be changed when the device is decommissioned. Values are:
  - Catalyst OS Only
  - Hybrid OS
  - Native OS
- Active OS Type—The operating system type detected on the managed device.

IOS Session

Note The attributes within this area are inactive for Catalyst OS devices.

The IOS Session area provides:

- Username—User name to establish an IOS management session with the device over telnet.
- Password—Password to establish an IOS management session with the device over telnet.
- EXEC Password—Password to enter privileged EXEC mode.

Cat OS Session

The Cat OS Session area provides:

- Same As IOS?—If enabled, the IOS telnet username and password are automatically used to connect to the Supervisor module over CatOS in Hybrid OS configurations.

  If this attribute is set to 'No' the Username, Password, and EXEC Password fields in the Cat OS Session area become active.

- Username—User name to establish a CatOS management session with the device over telnet.
- Password—Password to establish a CatOS management session with the device over telnet.
- EXEC Password—Password to enter privileged EXEC mode in a CatOS session.

If the above passwords are incorrect, some window values may report as ERROR.

The attributes within this area are inactive for IOS devices.

Reset System

The Reset System area provides:

- Last Restart Reason—Text message displaying why the switch or router was restarted.This has no value in a pure CatOS installation
- Reset—Button used to reset the switch or router. This action power cycles the switch or router.

  You are prompted to confirm whether you really want to reset the switch or router.Only users with administrative privileges can use the Reset button

  Any changes to the running configuration are saved when you reset the switch or router is reset using the Reset button.

Actions

The Actions area provides:

- Commission— Commissions the object manually. You can commission the object only if the object is in a decommissioned state. Clicking this button forces a subchassis discovery to be executed, and propagates the commissioned status to all subobjects.
- Decommission—Decommissions the object manually and propagates the decommissioned status to all subobjects. In the decommissioned state, the properties of the object are not monitored. As a result, data displayed in the configuration window may not be current.

System Information Tab

The System Information tab of the Network Element Management window provides the following information:

- System Up Time—Duration of time indicating how long the system has been running. This attribute is read-only.
- System Services—List of OSI layers supported by the switch or router. This attribute is read-only.
- System Location—Location of the switch or router.
- System Contact—Name of the person who is the contact for this switch/router.
- System Description—Multiline text description of the switch/router. This attribute is read-only.
- Cisco Contact Information—Details on how to contact Cisco Systems. This attribute is read-only and has no value in a pure CatOS installation.

SNMP Access Tab

The following areas are available on the SNMP Access tab of the Network Element Management window:

- IOS/LINUX SNMP
- Cat OS SNMP

IOS/LINUX SNMP

The IOS/LINUX SNMP area provides:

- SNMP v2c Read Community—The v2c community string used to read data from the agent.
- SNMP v2c Write Community—The v2c community string used to write data from the agent.
- Last Authentication Failure Address—The IP address of the last host that caused an SNMP authentication failure to occur. This has no value in a pure CatOS installation.

The attributes within this area are inactive for Catalyst OS devices.

Cat OS SNMP

The Cat OS SNMP area provides:

- Same As IOS?—If enabled, the IOS SNMP version and communities will be used to access the SNMP Agent on the Supervisor module in Hybrid OS configurations.

  If this attribute is set to 'No' the SNMP Read Community and SNMP Write Community fields in the Cat OS SNMP area become active.
- SNMP v2c Read Community—The v2c community string used to read data from the agent.
- SNMP v2c Write Community—The v2c community string used to write data to the agent.

The attributes within this area are inactive for Catalyst OS devices.

SNMP Trap Tab

The following areas are available on the Configuration tab of the Network Element Management window:

- Trap Generation
- SNMP Trap

Trap Generation

The Trap Generation area provides:

- SNMP Trap Status—Indicates the level at which SNMP traps are enabled. The level is one of these values:
  - disabled
  - layer2Only—SNMP traps are enabled on the datalink layer only.
  - layer3Only—SNMP traps are enabled on the network layer only.
  - layer2And3—SNMP traps are enabled on the datalink and network layers.
- Enable—Enables all SNMP trap generation from the switch or router.
- Disable—Disables all SNMP trap generation from the switch or router.

SNMP Trap

The SNMP Trap area provides:

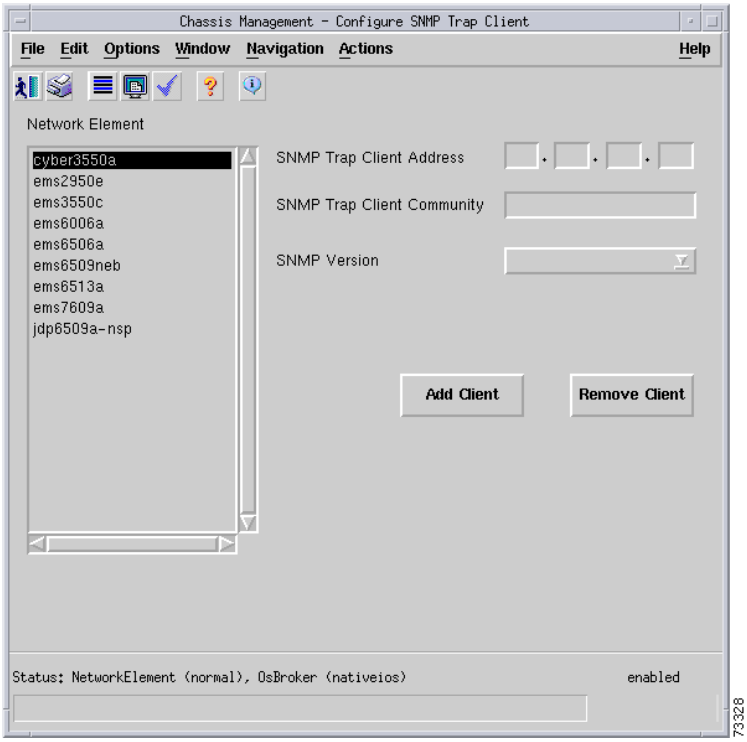
- Trap Client IP Table—IP address table to which SNMP traps generated by the switch or router are sent.
  - Trap Client IP—IP address to which SNMP traps are sent.
  - Client Community—Community string used within the SNMP trap.
  - SNMP Version—Version of the SNMP protocol used by Cisco EMF to communicate with the managed device. This field has the following value: snmpv2c.
  - Notification Layer - Indicates the level at which the SNMP trap client is defined. The level is one of these values:

- layer2Only—SNMP trap client is defined on the datalink layer only.
- layer3Only—SNMP trap client is defined on the network layer only.
- layer2And3—SNMP trap client is defined on the datalink and network layers.

The IP address of the Cisco EMF server host should be in this list at all times. If it is not, then Cisco EMF will not receive any traps from the switch or router, which might result in an event being reported in an untimely fashion or an event being missed.

- Configure—Launches the Chassis Management - Configure SNMP Trap Client window for modifying the Trap Client list.

Figure 5-3 Chassis Management—Configure SNMP Trap Client Window



The SNMP Trap Client Configure window provides the following:

- SNMP Trap Client Address—The IP address to which SNMP traps are sent.
- SNMP Trap Client Community String—The community string used within the SNMP trap.
- SNMP Version—The SNMP version running on the device, snmpv1c or snmpv2.
- Add Client—Adds a client to the client list.
- Remove Client—Removes the client from the client list.

Note An error is reported if a nonexistent client is removed or if an existing client is added.

Device Management Tab

The Device Management tab of the Network Element Management window consists of a single area, Write Config to Flash. The Write Config to Flash area provides a single button, Write Mem

It changes to the running config are saved to the startup config. In the future, when the startup config is accessed, it will contain the most recent running config written to memory.

Additional Notes Tab

The Additional Notes tab of the Network Element Management window contains the Notes area which is a text box that allows you to type in additional notes. For example, this information can include text indicating why global performance logging is turned on.

MAC Address Query Window

MAC Addresses are used within a network to identify specific ports on an interface. Other devices in the network use MAC addresses to locate ports in order to create and update routing tables and data structures. The MAC Address Query window allows you to query a Network Element for a MAC address.

The query results of a Network Element based on a MAC address display in an Action Report window, indicating data similar to a "show mac address table address xxxx.xxxx.xxxx" command.

Note MAC address queries may require extensive lengths of time to complete depending on the inventory of the Network Element object being queried.

To launch the MAC Address Query window, either:

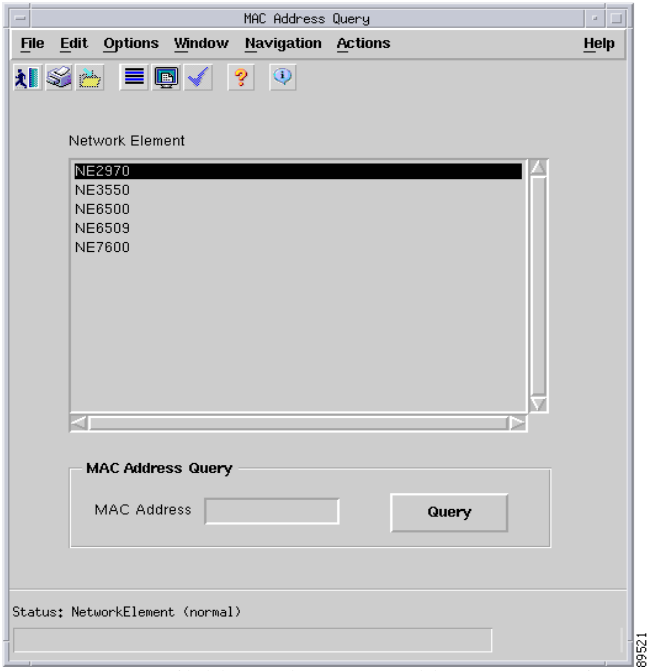
- Right–click a Site object within the Network or Physical containment views, then choose **CSM/7600 Manager > NE MAC Address Query**.

  Or

- Right–click a Network Element object within the Network or Physical containment views, then choose **NE MAC Address Query**.

Figure 5-3 is an example of the MAC Address Query window.

Figure 5-4 MAC Address Query Window



The following areas are available on the MAC Address Query window:

- Network Element
- MAC Address Query

Network Element

The Network Element area consists of a listing of all network elements available via the selected object.

MAC Address Query

The MAC Address Query area provides:

- MAC Address—Indicates the MAC address to be queried. The MAC address should be entered in xxxx.xxxx.xxxx format where x may be 1 through 9, A through Z, or a through z.
- Query—Searches the selected Network Element for the entered MAC address.

To query a MAC address for a Network Element, enter the MAC address in the corresponding field then click **Query**. An Action Report window displays indicating the results. An example of a report follows.

```
Chassis: ems6513a
show mac-address-table address: 0006.524B.6A0A
Codes: *-primary entry
  vlan  mac address    type    learn  qos  ports
-+-----+--------------+-------+------+----+------+
Supervisor:
* ---   006.524b.6a0a  static  No     ---  Router
* ---   006.524b.6a0a  static  No     ---  Router
* 613   006.524b.6a0a  static  No     ---  Router
* 333   006.524b.6a0a  static  No     ---  Router
* 652   006.524b.6a0a  static  No     ---  Router
* 701   006.524b.6a0a  static  No     ---  Router
* 700   006.524b.6a0a  static  No     ---  Router
* 678   006.524b.6a0a  static  No     ---  Router
* 677   006.524b.6a0a  static  No     ---  Router
* 908   006.524b.6a0a  static  No     ---  Router
* 904   006.524b.6a0a  static  No     ---  Router
* 907   006.524b.6a0a  static  No     ---  Router
* 906   006.524b.6a0a  static  No     ---  Router
* 710   006.524b.6a0a  static  No     ---  Router
* ---   006.524b.6a0a  static  No     ---  Router
* 999   006.524b.6a0a  static  No     ---  Router
* 201   006.524b.6a0a  static  No     ---  Router
-----------------------------------------------
```

If a MAC address is not found, a message displays in the table area of the report indicating no results found.